

# MONTHLY WEATHER REVIEW.

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## INTRODUCTION.

The REVIEW for July, 1894, is based on reports from 3,299 stations occupied by regular and voluntary observers. These reports are classified as follows: 148 reports from Weather Bureau stations; 41 reports from U. S. Army post surgeons; 2,248 monthly reports from State weather service and voluntary observers; 34 reports from Canadian stations; 223 reports through the Southern Pacific Railway Company; 509 marine reports through the co-operation of the Hydrographic Office, Navy Department, and "New York Herald Weather Service;" monthly reports from 33 U. S.

Life-Saving stations; 63 reports from navigators on the Great Lakes; monthly reports from local services established in all States and Territories; and international simultaneous observations. Trustworthy newspaper extracts and special reports have also been used.

The WEATHER REVIEW for this month has been prepared under the general editorial supervision of Prof. Cleveland Abbe. The statistical tables are furnished by the Division of Records and Meteorological Data, in charge of Mr. A. J. Henry, acting chief of that division.

## CHARACTERISTICS OF THE WEATHER FOR JULY, 1894.

The most prominent meteorological features of the month of July were the absence of well-developed cyclonic storms in the United States and the general prevalence of high barometric pressure with variable winds and clear, hot weather over the interior of the country; the special hot winds of the 25-28th from Kansas to Minnesota and Wisconsin; the general deficiency of rain throughout the northern half of the

United States, constituting the first part of a memorable drought and attended by numerous forest and prairie fires in July and the succeeding months; the general absence of tornadoes; the severe thunderstorms; the remarkably high maximum temperatures; the heavy rains of the south Atlantic and east Gulf States and the very low percentage of sunshine for those regions; the low water in the upper Ohio and Mississippi rivers.

## ATMOSPHERIC PRESSURE.

[In inches and hundredths.]

The distribution of mean atmospheric pressure reduced to sea level, as shown by mercurial barometers not reduced to standard gravity and as determined from observations taken daily at 8 a. m. and 8 p. m. (seventy-fifth meridian time), during July, 1894, is shown by isobars on Chart II. That portion of the reduction to standard gravity that depends on latitude is shown by the numbers printed on the right-hand border. This Chart also gives the so-called resultant wind directions for this month, based on the data given in Table IX of this REVIEW.

During the current month of July the mean pressures at sea level have been high, 30.10, off the coast of the south Atlantic States and highest off the north Pacific coast, 30.13, at Tatoosh Island. The regions of lowest pressure were in southern Arizona, 29.82, at Yuma, and nearly as low in Manitoba and Saskatchewan.

The normal distribution of atmospheric pressure and normal resultant wind direction for the month of July were approximately shown on Chart V of the REVIEW for July, 1893, as computed by Prof. H. A. Hazen, and are not now reproduced. As compared with the normal for July, the mean pressure for the current month was above the normal throughout the United States, except a deficit of 0.01 at Pen-

sacola and 0.03 at Roseburg. The principal excesses were: 0.05 or 0.06 in Nova Scotia, on the New Jersey and Carolina coasts, Key West, Nashville, Cairo, Lake Ontario, and from Missouri northward to Nevada, Idaho, and Oregon; this latter region constituted a decided ridge of high pressure, in which excesses of from 0.06 to 0.13 occurred, and divided the low pressure of the Gulf of California from that of British America.

As compared with the preceding month of June the pressures reduced to sea level show no appreciable change throughout the Atlantic States, Nova Scotia, and New Brunswick. There was a decided rise in the region of the ridge above mentioned, viz, from Kansas and New Mexico to Oregon, British Columbia, Saskatchewan, and Manitoba, over all of which region the rise was over 0.05, amounting in the maximum to 0.15 in Colorado, 0.13 in Wyoming, and 0.12 in Assiniboia.

## DIURNAL VARIATIONS.

The systematic periodic diurnal variations of pressure are shown by the hourly means given in Table VI.

## AREAS OF HIGH AND LOW PRESSURE.

The following sections give some details as to the phe-